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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/524,023

11/17/2005

Graham R. Eastham

31229-213464

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26694

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03/28/2007

VENABLE LLP

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EXAMINER

KATAKAM, SUDHAKAR

ART UNIT

PAPER NUMBER

1621

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

03/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/524,023

Applicant(s)

EASTHAM ET AL.

Examiner

Sudhakar Katakam

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 3-4, 8-10, 12-18, 20-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5-7, 11, 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/9/05, 11/17/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The examiner has considered applicant's Information Disclosure Statements of 02/09/2005 and 11/17/2005. Please refer to the signed copies of the PTO-1449 forms attached herewith.

Specification

2. The first sentence of the specification should be corrected to reflect the fact that the instant case is a continuation of PCT/GB03/03419 filed on 08/06/2003.

3. The disclosure is objected to because of the following informalities:

It is recommended to provide the drawn chemical structures for the disclosed compounds and number them appropriately in the claims or specifications.

Response to Restriction

4. Applicant's Remarks/Arguments, and election with traverse of claims 1-11, 19, and 20 in the reply filed on 6th Feb 2007 is acknowledged. The traversal is on the ground(s) that the applicants argued

- i. *"the USPTO alleged that the claims were directed to different inventions....."* This is not found persuasive because group I is drawn to a product, i.e., a catalyst system, group II is drawn to a process of product use, i.e., carbonylation process using the catalyst system, and group III is directed to a process for the preparation of an intermediate for the product. These three inventions are distinct for the reasons above and have acquired a separate

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status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

ii. *"Further the USPTO has alleged that "this element" is shown in US 4960949".* The common technical feature in the three groups is a bidentate ligand of the catalyst system, which is a bidentate phosphine of general formula (I). This element is shown in the prior art (US 4,960,949). The bidentate ligand of US 4,960,949 is common technical feature in the three groups, when n is 0, R₁ and R₂ is cycloaliphatic radical, R₃ and R₄ is hydrogen, and Y is P atom in their generic formula.

iii. *"Lastly, the USPTO has required an election of species".* The inventions are independent or distinct because prior art anticipating and/or rendering obvious one species would not necessarily anticipate and/or render obvious the other groups. Hence there will be a serious burden on the examiner if restriction is not required because the inventions require a different field of search, restriction for examination purposes as indicated is proper.

Claims 12-18, 21-30 are withdrawn from further consideration as not being drawn to the elected invention.

Claims 3-4, 8-10, and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species for a catalyst system, there being no allowable generic or linking claim.

The requirement is still deemed proper and is therefore made FINAL.

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-2, 5-7, 11, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Devon et al** (US 4,960,949) in view of **Eastham et al** (6,984,668).

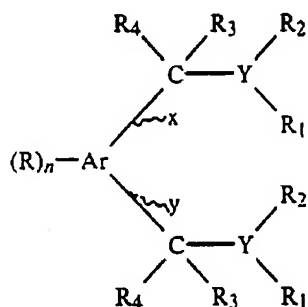
The instant claims are drawn to a catalyst system capable of catalyzing the carbonylation of an olefinally unsaturated compound, which catalyst system is obtained by combining (a) a metal of group VIB or group VIIIB or a compound thereof, and (b) a bidentate phosphine of general formula (I),



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and the catalyst system includes in a liquid reaction medium a polymeric dispersant dissolved in a liquid carrier.

Devon et al teach a catalyst system comprise a metal of group VIII B, viz., rhodium, and a bidentate phosphine of general formula,



wherein, Ar is aromatic ring compound having 6 to 14 carbon atoms, R is alkyl, n is 0-4, R₁ and R₂ is cycloaliphatic, R₃ and R₄ is hydrogen, and Y is P atom.

The difference between the instant invention and the **Devon et al** is that in the instant application adamantyl radicals represent the groups R₁ and R₂ in the bidentate ligand, where as in the **Devon et al** these are cycloaliphatic radicals. Other difference is **Devon et al** fails to teach the use of a liquid reaction medium a polymeric dispersant dissolved in a liquid carrier for the catalyst system.

With regard to the polymeric dispersant dissolved in a liquid carrier, **Eastham et al** teach a polymeric dispersant dissolved in a liquid carrier, which is capable of

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stabilizing a colloidal suspension of particles of metal compound within the liquid carrier [see Abstract].

In view of explicit teachings of **Devon et al** and **Eastham et al** the examiner purports that it would have been obvious to a person of ordinary skill in the art, at the time of invention was made, to use **Devon et al** and **Eastham et al** teachings to make instant applicants' catalyst system, with a reasonable expectable of success. The bidentate ligand of **Devon et al** obvious over instant claims, when n is 0, R_1 and R_2 is cycloaliphatic radical, R_3 and R_4 is hydrogen, and Y is P atom. Changing such parameters is prima facie obvious because an ordinary artisan would be motivated to optimize the catalyst for the carbonylation of an olefinally unsaturated compound to make the process more economical or efficient by using **Devon et al** and **Eastham et al** teachings with a reasonable expectation of success.

Conclusion

8. No claim is allowed
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhakar Katakam whose telephone number is 571-272-9929. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

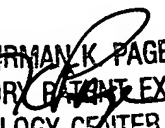
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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SK


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